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Finlay River Lake Trout Spawning Investigation

R. J. Zemlak and A. R. Langston
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Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave. 3rd Floor, Prince George B.C. V2L 3H9

Website: *www.bchydro.bc.ca/environment/initiatives/pwcp/*

This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

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Author(s): Randy J. Zemlak[1] and Arne Langston[1]
Address(es): [1] Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave., 3rd Floor Prince George, B.C. V2L 3H9

ABSTRACT

An investigation of a section of the Finlay River, reported to be a spawning location for lake trout (Salvelinus namaycush). was undertaken in September of 1994. Field experiments were conducted employing angling gear and a gill net. Rainbow trout (Oncorhynchus mykiss). Arctic grayling (Thymallus arcticus), and bull trout (Salvelinus confluentus) were captured. Lake trout were captured only in the Fishing Lakes, not in the river. The presence of a lake trout population spawning in the Finlay River is possible, but was not observed.

INTRODUCTION

The purpose of this investigation was to confirm the presence of a river spawning lake trout (Salvelinus namaycush) population. Specific objectives included:

(1) verification of the presence of lake trout in the Finlay River at the study area; and
(2) capture of lake trout in spawning condition or partially spent.

Lake trout (Salvelinus namaycush) spawning in Northern B.C. occurs between mid-September and mid-October. Preferred spawning locations are large boulder or rubble shoals on inland lakes at depths of less than 13 meters (Scott and Crossman, 1979). In rare instances, spawning may occur in rivers, as observed and documented for Montreal and Dog Rivers, Lake Superior, by Loftus (1958). Reports from local fishing and hunting guides suggested that lake trout were observed spawning in the Finlay River near the Fishing Lakes.

METHODS

Three different sampling techniques were to be used for this investigation. First, to determine if the lake trout were in the river at the study area, angling gear and a tangle net was used. Spin cast rods with barbless hook lures were used on the first attempt. Angling was employed over the entire width of the Finlay River. Effort was initially concentrated on specific sites identified by local guide/outfitters. Effort was then extended to a 10 km stretch of the Finlay River.

On the second attempt, a 2.5 cm "stretch" size gill net (sinking monofilament) was used to try and tangle the fish. The net was stretched out perpendicular to the shore and observed constantly. When the floats attached to the net were "bobbing" up and down, the net was checked to identify and release the fish.

Once lake trout were observed in the Finlay River, snorkel swims were to be conducted. Lengths, weights, and sexual maturity were to be recorded from lake trout captured in the river.

METHODS (continued)

Study Area

The Finlay River flows into the north end (Finlay Reach) of Williston Reservoir. The section of river adjacent to the Fishing Lakes was the study area (figure 1).

Access: Float plane
U.T.M.: 9.6467.63783
Map #: 94-E/10, Scale = 1:50,000
M.U.: 7-40

The study area is located approximately 315 km north of Smithers. At the study site (10 km section), the river had an estimated average wetted width of 150 m, average depth of 2 m and a velocity of 1 m/sec (figure 2).

RESULTS

No lake trout were captured in the Finlay River. Lake trout (4) were captured in one of the Fishing Lakes. Visual observation revealed that one of the lake trout was a partially spent male and a second lake trout was a partially spent female. The other two could not be determined. The largest lake trout weighed three kilograms. These lake trout were caught near the east shore in approximately seven meters of water.

A beaver dam exists on the outlet of the lake which flows into the Finlay River. Upstream fish passage over this darn was not possible with the flows present at the time of this investigation.

Fish captured and released in the Finlay River included Arctic grayling (Thymallus arcticus) (13), rainbow trout (Oncorhynchus mykiss) (14), and bull trout (Salvelinus confluentus) (12). Bull trout were sampled for length, weight, and a pectoral fin clip was taken for age determination (Appendix 1). Floy tags were applied to the bull trout. All fish were captured by angling. No fish were captured in the gill net.

Snorkel swims were not conducted due to low visibility created by excessive rainfall.

The average water temperature of the Finlay River was 7.7° C.

figure 1. Location of the Fishing Lakes. scale 1 : 250,000

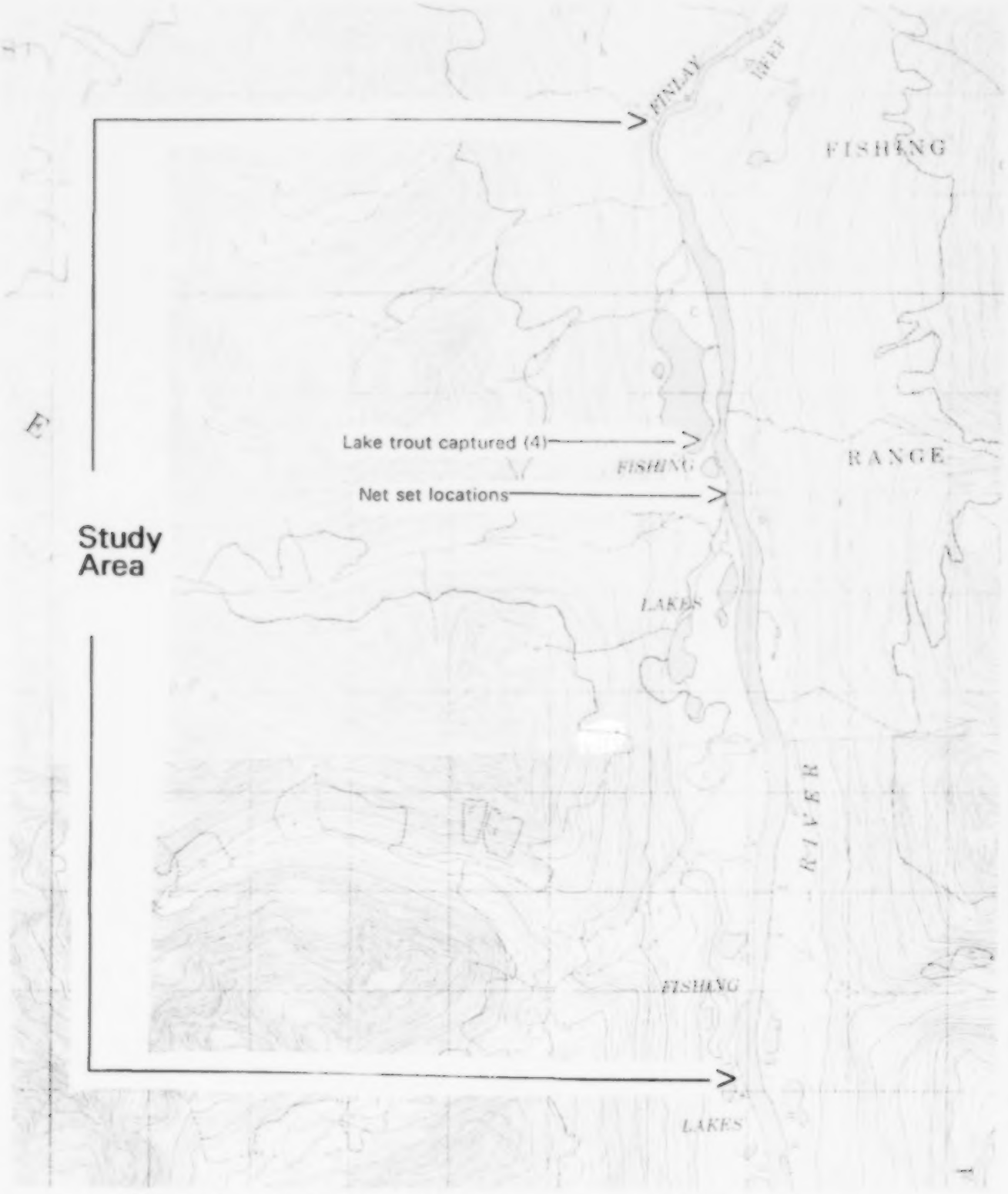

figure 2. Study area location. scale 1 : 50,000

DISCUSSION

Weather conditions at the time of the investigation created unforseen difficulties in confirming the presence of a river spawning lake trout population. According to the owner of the Finlay River Outfitters, Dennis Yost (pers. comm.), excessive rainfall during the month of September had increased the river water level significantly. Attempting to set the gill net was difficult as the velocity of the river was estimated at one meter per second. The high velocity caused the gill net to hang horizontal instead of vertical thus reducing the efficiency of the net.

Angling in the river for the lake trout was unsuccessful. Many different lures were used at different locations on the river. Angling techniques, which were successful for capturing lake trout in one of the Fishing Lakes, did not produce lake trout in the Finlay River.

There is a possibility that the individuals who observed the lake trout spawning in the river may have misidentified the fish for bull trout.

A number of locations were observed where a gravel bottom (approximately 2 m in depth), and a widening of the river (low velocity), simulated a lake bottom and could be a location lake trout could successfully spawn.

Other species of fish were caught on many different types of lake trout lures. It is interesting to note that the Arctic grayling and rainbow trout were caught on large lures intended for lake trout. In the authors experience, these large lures have rarely caught rainbow trout and never caught Arctic grayling in any other location of the Williston watershed.

To verify the presence of a lake trout population spawning in the Finlay River will require further field studies.

REFERENCES

Loftus, K.H. 1958. Studies on river spawning populations of lake trout in eastern Lake Superior. Trans. Amer. Fish. Soc. 87 (1957): 259-277.

Ministry of Environment. Lake trout management in Northern B.C.. Habitat Conservation Fund pamphlet.

Scott, W.B. and E.J. Crossman. 1979. Freshwater fishes of Canada. Fish. Res. Board Canada. Bulletin 184. 966 p.

APPENDIX 1

INDIVIDUAL FISH DATA

Method of Capture: Angling.

Species	Fork Length (cm)	Weight (grams)	Orange Tag Number	Sample Type	Age (yrs)	Comments
Bull trout	72.0	3,348	2734	Fin ray	10	
Bull trout	52.0	1,277	2735	Fin ray	5	
Bull trout	63.5	2,270	2736	Fin ray	11	
Bull trout	66.0	2,611	2737	Fin ray	8	
Bull trout	47.0	1,022	2738	Fin ray	7	
Bull trout	54.5	1,476	2739	Fin ray	7	
Bull trout	49.0	993	2740	Fin ray	8	
Bull trout	50.5	993	2742	Fin ray	9	
Bull trout	58.0	2,043	2743	Fin ray	11	
Bull trout	53.0	1,305	2754	Fin ray	8	
Bull trout	53.5	1,390	2755	Fin ray	?	Unknown age
Bull trout	70.0	2,866	2756	Fin ray	12	

AGE DETERMINATION COMPLETED BY:
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